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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/667,019	09/18/2003	Michael W. Vice	10030017	9142

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AGILENT TECHNOLOGIES, INC.
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EXAMINER	
NGUYEN, KHANH V	
ART UNIT	PAPER NUMBER
2817	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/09/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/667,019	VICE, MICHAEL W.	
	Examiner	Art Unit	
	Khanh V. Nguyen	2817	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 December 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10 and 21-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10 and 21-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *22 December 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 8, 21, 28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is not clear what is meant "when the differential amplifier is in **a common mode**". Does applicant mean "the inductors have mutual inductance that increases **common mode rejection in the differential amplifier**" as claimed in claim 6?

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 1-10, 21-30 are rejected under 35 U.S.C. 102(a) as being anticipated by Cassan et al. (IEEE Journal of Solid-State Circuits, Vol. 38, No. 3, March 2003).

Regarding claims 1, 21, Cassan et al. (**Fig. 7**) disclose a differential amplifier comprising: a pair of transistors (Q1); a pair of mutually coupled inductors (LD) that are arranged to bias the transistors (Q1) via their drains.

Regarding claims 2, 3, 22, 23, wherein the mutually coupled inductors (LD) comprise a transformer (MD) which has an inherent function as disclosed in claim 3.

Regarding claims 4-6, 24-26, wherein (LM1) can be read as the mutually coupled inductors coupled to inputs via gates of transistors (Q1) and having the functions thereof.

Regarding claims 7, 27, wherein the mutually coupled inductors (LS) coupled in series with a source of each transistor (Q1).

Regarding claims 8-10, 28-30, wherein the mutually coupled inductors (LD) are coupled in series with a first terminal (drain) of each transistor (Q1); a mutually coupled inductors (LM1) can be read as a second pair that are coupled in series with a second terminal (gate) of each transistor (Q1); and the functions as disclosed in claims 10, 20 would be inherent in the reference circuit.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-10, 21-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Belot (6,639,468) in view of Cassan et al. (IEEE Journal of Solid-State Circuits, Vol. 38, No. 3, March 2003), which cited in Final Office Action mailed on October 27, 2005.

Regarding claims 1, 21, Belot discloses the claimed invention except the inductors have mutual inductance. Belot (Fig. 2) discloses a differential amplifier comprising a pair of bipolar transistors (T1A, T1B); a pair of inductors (LAA, LAB) that provide impedance matching for the differential amplifier, column 4, lines 29-34.

Cassan et al. (**Fig. 7**) disclose a differential amplifier comprising a pair of transistors (Q1, Q1), each has an inductor (Ls) coupled to its source, wherein the inductors (Ls) are magnetically coupled (Ms).

Belot and Cassan et al. are analogous art because they are from the same field of endeavor, namely low noise amplifier (LNA). Accordingly, it would have been obvious in view of the reference, taken as a whole, to have modified the circuit of Belot to have inductors (LAA, LAB) magnetically coupled, as taught by Cassan et al. Such a modification would have imparted the advantageous benefit of decreasing chip area and increasing performance, see page 432, column 2, thereby suggesting the obviousness of such a modification.

Regarding claims 2, 22, wherein inductors (LAA, LAB) are magnetically coupled, thus acts as transformer.

Regarding claims 3, 23, wherein inductors (LAA, LAB) provide impedance match for the differential amplifier.

Regarding claims 4, 24, wherein inductors (LAA, LAB) coupled to emitter of transistors (T1A, T1B), wherein the substitution of one well known type of transistor for another would have been obvious in the absence of unexpected results, particularly as both bipolar and FET are widely used in amplifier circuitry.

Regarding claims 5, 25, wherein the inductors (LAA, LAB) provide noise control. Note, the reference circuit is low-noise amplifier.

Regarding claims 6, 26, since the inductors having similar arrangement, thus they are capable of having similar claimed function.

Regarding claims 7, 8, 27, 28, wherein Belot also discloses each circuit (CEB) including an inductor, but the inductors are not magnetically coupled. Cassan et al. disclose inductors that are magnetically coupled. Belot and Cassan et al. are analogous art because they are from the same field of endeavor, namely low noise amplifier (LNA). Accordingly, it would have been obvious in view of the reference, taken as a whole, to have modified the circuit of Belot to have inductors (LAA, LAB) magnetically coupled, as taught by Cassan et al. Such a modification would have imparted the advantageous benefit of decreasing chip area and increasing performance, see page 432, column 2, thereby suggesting the obviousness of such a modification.

Regarding claims 9, 29, wherein inductors (LAA, LAB) are magnetically coupled, thus acts as transformer.

Regarding claims 10, 30, wherein inductors (LAA, LAB) coupled to the output provide impedance match for the differential amplifier.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khanh V. Nguyen whose telephone number is (571) 272-1767. The examiner can normally be reached from 8:00 AM – 4:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pascal can be reached on (571) 272-1769. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KHANH VAN NGUYEN
PRIMARY EXAMINER
Art Unit: 2817